



VIEW OF THE AMERICAN TRACT SOCIETY'S BUILDING.

### How Books are Made.

BY E. H. MILLER.

THE cheapness of books is a continual marvel when we consider the amount of head and hand labor required to manufacture one. In our consideration of the various processes in book-making we shall not go back to the beginning; we shall not philosophize upon the inspiration of thought, or attempt to trace it in embryo as it flashes forth from its shadowy realm, subtle, volatile, evanescent, till caught by the pen point and fastened in comeliness and beauty upon paper: we shall take it as it there stands.

When a writer brings to us golden sunshine and sweet music and delicious fragrance, we naturally, in our imaginations, surround his life with real brightness and beauty and melody. We can hardly conceive of an absorption so entire, a concentration so intense, as to be wholly oblivious to outside surroundings. In contradiction to this impression of ours we were introduced, not long since, to a plain, dingy, old, worm-eaten desk that looked as if it had not been on familiar terms with a cabinet-maker for twenty years or more, and a straight-backed chair, actually cane-bottomed, near a small, dust-veiled window, in a compositor's loft, where sits the most charming writer of the age. How full of sunshine he must be, we thought, to flood thousands with it from such a place! So there are those born with sunshine in them and who, regardless of surroundings, impart it to others; and there are those who must obtain it from without before transmitting it. But it is to our purpose that thoughts radiant or otherwise are put on paper, whether conceived in a Bedfordshire Jail, Wartberg Castle, compositor's loft, an arbor of roses, or on cushions of velvet, mid pictures, books, and statuary: written plainly, let us hope, on only one side the white sheet, with a marginal space to the left, properly punctuated; sheets numbered but never rolled, and better, not folded, and so safely in the editor's hands.

The next step is an important one, for thereby hangs a tale or no tale. There are two words in the writer's lexicon that carry more sweet and bitter with them than any other in his vocabulary, and there are but few who have not tasted the honey of the one and the gall of the other. "Accepted" or "rejected" must fall upon the ear of many a literary aspirant much the same as "acquitted" or "condemned" strikes the heart of one to whom it means either liberty or bondage. Yet these words are handled by the stoic editor, if he is true to his profession, as if they carried neither hope in the one case nor despair in the other. But our manuscript is accepted and in the printer's hands. "What is well begun is half done" is a saying old enough to be true, but in book-making it is literally but just begun, as we shall see as we follow step by step the manuscript to its final publication. In doing this we shall carry our readers through the various rooms of one of the largest and best printing and book-making establishments in the country, that of the American Tract Society, a picture of whose present building we give herewith. There are other establishments where larger printing operations are carried on, but there are few, if any, in which all the operations of book-making, from the making of copy in the editor's room to the sale of the book or paper in the store, can be more satisfactorily traced.

When the editor's work is over, when the manuscript is read and approved, and sometimes, unhappy man! is laboriously gone through, pen in hand, and punctuated, paragraphed, and other-

wise prepared for the press, it is "given out" to the printer, and goes into the compositor's hands.

For the benefit of the uninitiated we may say that the "compositor" is the professional name for the type-setter, so named because he *composes*, that is, sets in order, the type which are the foundation of the printed page.

First, then, in seeing how books are made, we enter the composing room. Here are stands scattered about; in that of the American Tract Society there are something like fifty of them, each one mounted by a pair of cases, divided off into little compartments, one for each letter of the alphabet. The lower case contains the small letters, those in constant demand; the upper one has the large and small capitals, the dignitaries that move in higher circles and come out only on special occasions.

The vowels are by far the most useful members of society. They occupy rooms directly in front of the compositor, and they are more extensive than those of most of the consonants. But the busi-

est little body of them all, in a home a third larger than any in the township, and higher up than the first in aristocracy, is *e*. It is a sort of omnipresent character, makes itself quite numerous in every entertainment, is just as sure to be in a famine as a

feast, is present alike at weddings and funerals, and repeats itself at meetings of every description; *j*, in a hall-room, third floor, back, is not much sought after, perhaps from being found in jail; *d*, *b*, *p*, *q*, (the latter off in a corner room on first floor, unpopular, slighted, but always with one constant, steadfast follower,) are the most fractious, troublesome members of the corporation. They are turning somersets, changing places without permit, and playing such unexpected pranks that the fresh typo is puzzled to tell which is which; and the precept so necessary to heed in successful type-setting, "to mind your *ps* and *qs*," has passed into a telling proverb even out of the composing-room. The comma, that mite of a body, yet very important in everyday make-up, occupies a front room twice the size of the one to the left and a little higher up, which is taken by that tall, crooked, though graceful, fourth cousin (?) whose head hangs heavy with wisdom from always asking questions. A step farther removed is the home of the fellow (!) who stands in upright, open-mouthed wonder and astonishment at whatever goes before it. The dash—ing young fellow, whose particular place it seems a little hard to define, but whose very presence denotes to a keen observer that there is something lacking, or at least unfinished, occupies a room in the loft above the small capitals.

Double letters, figures, signs, accents, different sized quadrats and spaces, making in all 140 "sorts," lodged in quarters assigned them, go to make up what is termed, in printer's parlance, a "font of letter." Mixed type, called "pi," is a distasteful dish to compositors; is usually produced by accident, but is always distributed before becoming stale, in all well-regulated composing-rooms.

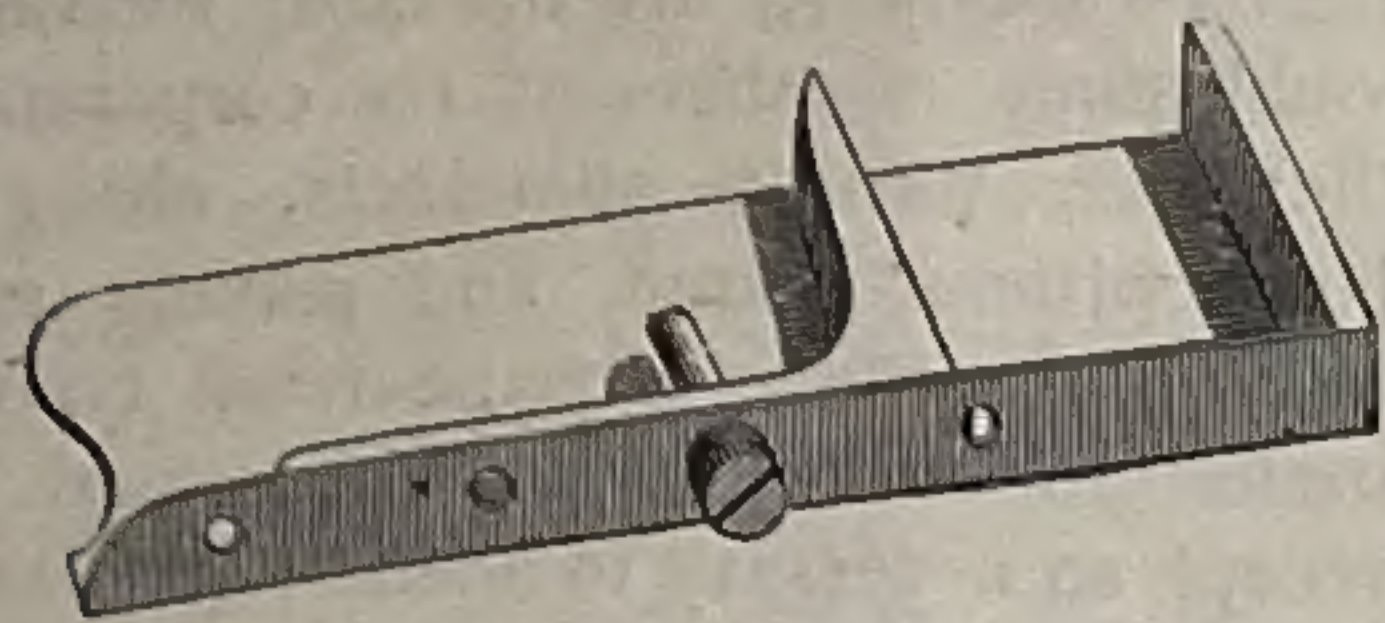
The compositor places a page of the MS. before him. It is held upright by a weight attached to a string which is tied to a metal rule and serves the purpose of a place-mark. With a "composing-stick" in his left hand, which has one end adjusted by a slide and screw to suit any work, and a rule of smooth metal, the length of the line so that the type may slide easily into place, he begins at the left bottom corner of the "stick" so that the type is directly the reverse of the printed page. He picks up the letters fixing his eye on the "nick" in the shank of each one, which being set outward brings it into right position without scanning the face. To save time the left hand meets the right half way, letter



COMPOSITOR AT THE CASE.



by letter each word is spelled out, yet done by an able compositor almost as fast as one can count; his finger-ends have become so sensitive to the individual feeling of each type that he can generally detect a wrong letter without looking at it. As he proceeds he moves his marker from line to line on his copy in order to keep his place. There



COMPOSING-STICK.

is a variety of gestures noticeable in a composing-room, sometimes a little amusing; the most common one is a slight motion of the head accompanying the type as it clicks into place.

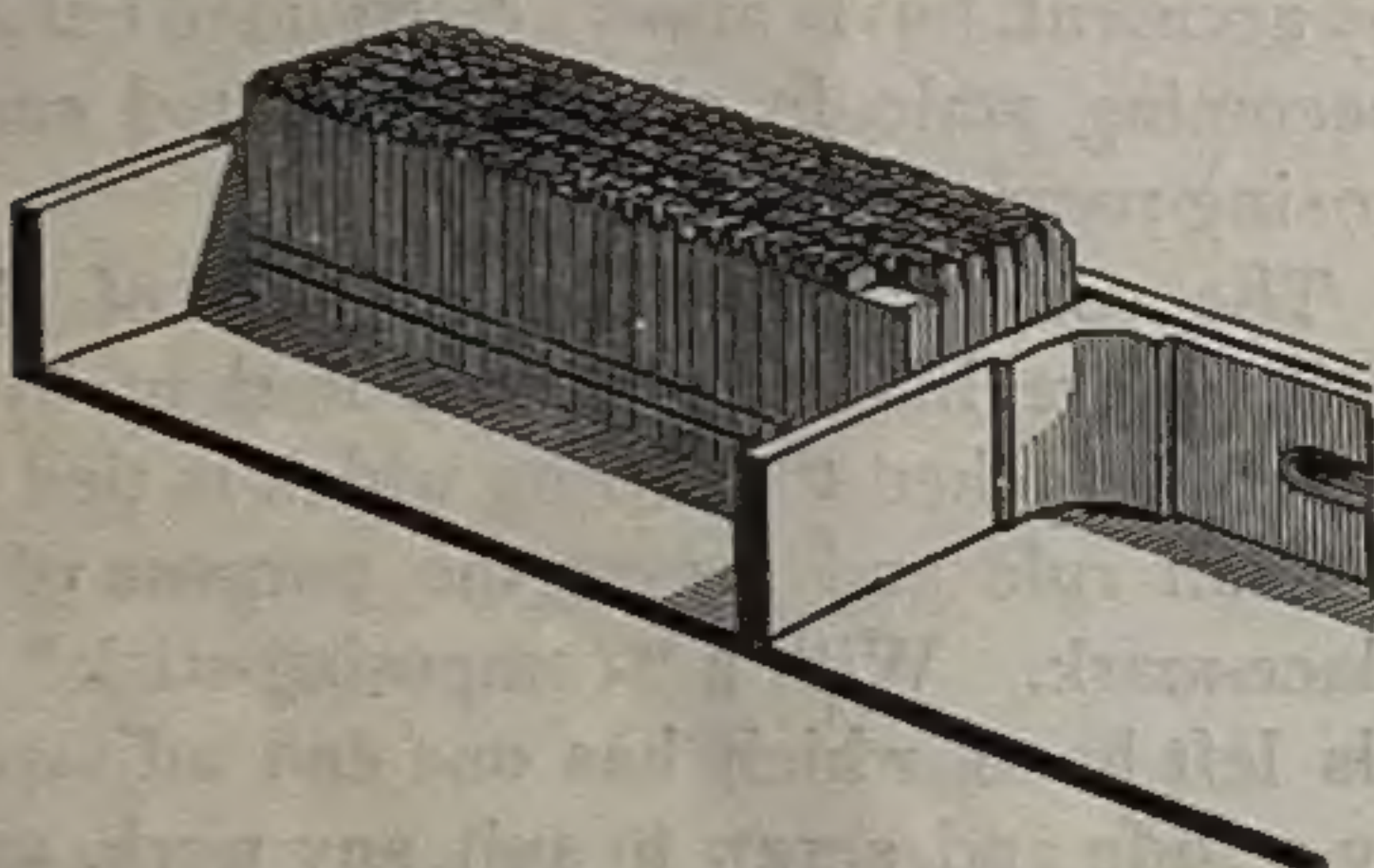
No syllable can be divided at the end of a line nor can a syllable of only one letter be carried to the next line. Now it seldom



LINE OF TYPE SPACED.

happens that the last letter of the syllable exactly fills the line, and this must be effected by using thinner or thicker spaces as the case may be. The line thus filled out is said to be "justified." This is the justification by work, not faith. When the line is full, the rule is taken out from behind it and put on top and another line begun.

At this corner-stand is a living illustration



A COMPOSING-STICK WITH TYPE.

of the standing rule in the art, "follow copy." Here is a man who sets type in more than a dozen foreign languages, yet can read none of them. He is familiar with the different alphabets, and with keen perception and well-developed individuality follows the copy so closely, letter by letter, that the proof-reader says a cleaner proof comes from no one. This is literally walking by sight. To show how much more complicated are the alphabets of some of these languages than the English, as a standing puzzle to the uninitiated, we give a sentence of each of the Red River and Armenian dialects, from books published by the American Tract Society.

ԱՐ ՍՆՈՒ ԵԱՍ ԴԻՐ  
ԵՒ ԿԵՍՈՒ ԵՆՈՒ ԵՆՈՒ,  
ԵՒ ԵՆՈՒ ԵՆՈՒ ԵՆՈՒ?

"Աստի ելեք դուք որ շար էք, ձեր դասակներուն աղէկ ընծանով տալ գիտէք, որչափ աւելի ձեր Հայրը երկնիքէն Սուրբ Հոգին երեսն տայ անոնց, որ իրմէ կը խնդրեն": Առկ. Ժ Բ. 13:

Type set up becomes "matter," and when the "composing-stick" is full it is emptied on the "galley," a flat piece of wood or metal with a narrow rim on two sides to keep the matter in place. A "take" is the quantity of copy taken in hand by one compositor. The matter in the galley is of course just as wide as the page of the book, or the column of the newspaper, but its length is indefinite.

When the "galley" is filled it is made up or divided off into pages or columns, according to its final form, and "imposed" in an iron frame called a "chase." This chase contains the type in the form of pages as it will finally appear. The type is fastened in proper position or "locked up," as it is called, by wooden "quoins" or wedges, which are driven in between the type and the outer edge of the frame by a mallet and shooting-stick, and then planed down so that the face of the type is perfectly level. But before this is done a first impression of the type called "galley-proof" is taken on a long strip of paper, the width of the column or page. This, with the copy, is handed to the proof-reader, who, with an assistant termed "copy-holder," compares the two, the copy-holder reading aloud the MS., while the reader notes the errors and corrects them by marks or signs on the margin. The proof-reader must have a keen eye to detect all the little errors that may occur, a broken or turned letter, one of a wrong size or style, too much or little

space between them, a little rise or depression from the proper level, a repetition or omission, a score of minute things, of hairbreadth deviations, which though unnoticed by an untrained eye would yet greatly mar the beauty of the page. The following instance shows some of the difficulties in the way of getting out a perfect book in typography. Some professors of the University of Edinburgh resolved to publish a book which should be a model of typographical accuracy. Six proof-readers were employed, and after it was thought to be perfect the sheets were pasted up in the hall of the University, and a reward of two hundred and fifty dollars was offered for every mistake that should be discovered. When the book was printed, it was found to contain several errors, one being in the title-page, another in the first line in the first chapter.

The only books believed to be entirely free from errors are an Oxford edition of the Bible, a London and Leipsic Horace, and an American reprint of Dante. As difficult as it is to have accurate typography, the proof-reader is not limited to this alone: errors in punctuation, grammar, and rhetoric, come within his province. While the compositor is expected to "follow copy," the proof-reader is expected to correct copy. He must be wise enough and clear-eyed enough to detect and call attention of the editor to errors in both author and compositor. The proof-reader is one of the most important agents in the production of a correct literature, yet his office is perhaps the most thankless of all employments. Accuracy is expected, and hence is seldom or never praised, while only errors are noticed. Happy is he if he does not have to answer for the sins of the writer as well as those of the compositor and his own.\*

The marked or corrected proof is returned to the compositor, who with a sharp-pointed bodkin makes corrections in the type. This he does for nothing, unless alterations are made in the copy; for he is paid for corrected matter by the piece, so much per thousand ems. An "em" (■) is the square of the body of a type. To find the amount of work, the number of ems required to fill a line is counted and multiplied by the number of lines; so that a page which is thirty lines long and twenty wide,

\* We may take this occasion to give public expression of our personal sense of indebtedness to the proof-reader of the ILLUSTRATED CHRISTIAN WEEKLY. That there is no weekly paper so free from errors and inaccuracies, not only in typography and expression, but in its statements of facts, is due to no one man more than to him, whose painstaking accuracy affords us some new surprise almost every week.



SHOOTING-STICK.



MALLET.

contains six hundred "ems." The number of lines on a column or a page depends in part upon the size of "leads." The type may be placed in immediate contact with each other. In that case where two long letters come together, as a "y" on one line and an "h" on the line immediately below, the tail of the one and the top of the other will touch. A column or page so set is called "solid," and presents a dark, heavy, and unattractive appearance. To prevent this "leads" are introduced. These are strips of metal as long as the column or page is wide, and placed between the lines of type, so as to separate them. A page thus printed is said to be leaded. All the type in the ILLUSTRATED CHRISTIAN WEEKLY is more or less leaded.

After all the corrections marked by the proof-reader have been made, a second proof is taken called a "revise," which the reader compares with the former to see if the corrections already made have been attended to; he again carefully reads in order to detect any errors that may have escaped the first reading. Another and last proof is then taken and either sent to the author or proof-reader for final corrections. Happy is the printer if it does not return to him scrawled all over with emendations and alterations which the writer wishes to make; for the printed page presents often an appearance very different from the written, and there are a great many writers who never follow the sage advice given to us by an experienced author, "Always write your book before you begin to print it." After the last correction is made, if the work is to be printed from the type, the pages are imposed in a chase, locked up, and sent to press.

But most printing is now done from stereotype or electrotype plates. How these are prepared we shall tell our readers in a succeeding number.

### The Words that Move.

SCOLDING the gospel at people is not the most effective way of presenting God's message to man. The wrath of man worketh not God's righteousness, nor man's salvation.

"Were you ever a fisherman?" said an aged Christian to a student of divinity.

"Yes, I have fished with the rod at the rocks," was his reply.

"Oh, but I mean with the net?"

"No, I never did."

"Well, if you had ever done that, you would have known that when there is thunder, the fish go to the bottom of the sea."

"Yes, I know that to be a fact."

"Well, my young friend, there are many ministers who do not seem to think of that."

GOOD words are worth much and cost little.

## THE FIRESIDE.

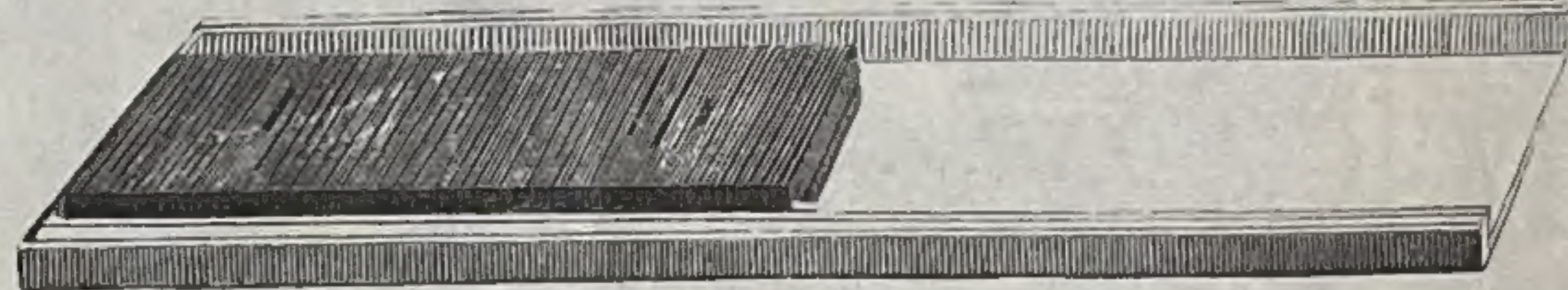
### Carter Quarterman.

BY WILLIAM M. BAKER.

#### CHAPTER IV.

"If you suppose for a moment that my husband is not devoted to me and to our family, brother Archibald, you are mistaken!" It was my mother who said it to my uncle across the roaring fireplace, and when she supposed me, like the rest of the children, fast asleep in the chamber adjoining. If she had said it with the least heat, it might have been the ancient story of woman's devotedness to her husband against everything. She spoke, however, of her husband as you or I would have done of the shining of the sun at its meridian, as of a fact not needing to be stated. And she was right: no man could love wife or children more. It was assured, not only in his devotion to us when at home, or in his long and almost daily letters overflowing with affection to us when away. My father was what they called in Virginia, "a good provider," that is, anticipated the wants of his family by ample supplies of all kinds, as well as by seeing to it that my mother had more than was needed of money, "that you may feel perfectly secure," as he worded it.

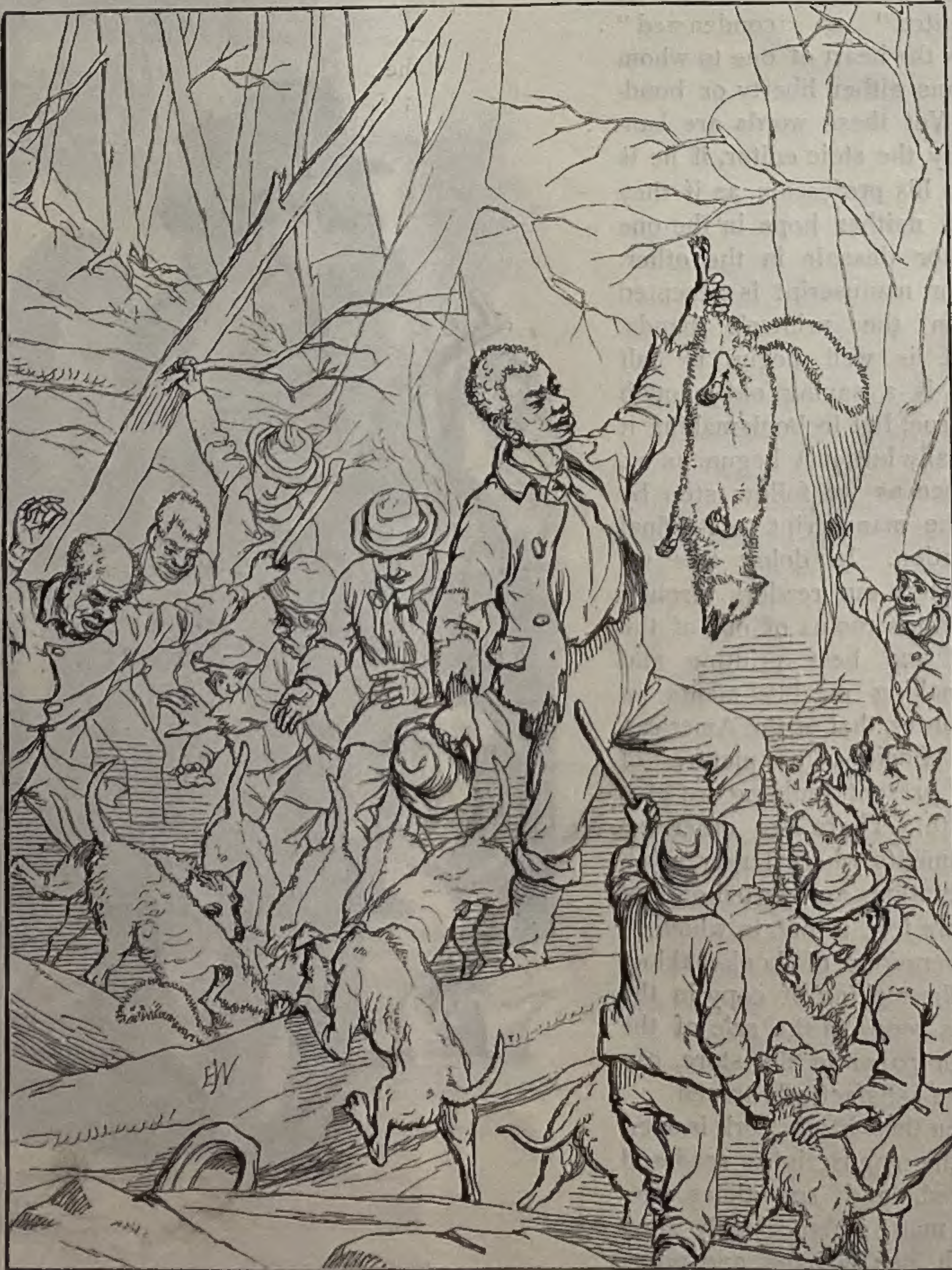
Supplies! People that send to the store in the city, or to the grocery at the corner for everything as they need it, do not know the meaning of the word. Not people on their plantations alone; at our home there in the city it meant a poultry yard full of chickens, ducks, and turkeys, a sty with a brood of pigs



GALLEY AND MATTER.

yearning for the oven, a smoke-house whose rafters were hidden with hanging sides and hams of bacon, and whose floor, saving a space in the centre upon which to make the smoke, was heaped with salt, flour, molasses by the sack and barrel, and rice and sugar by the hogshead. And one never sees such pantries these days! They speak of the wastefulness of slavery. Oh yes, I dare say, but there was the profusion of nature, and nature at the tropics, in the open corn-cribs of the plantation, and great barns with heaps of wheat fresh from the thrasher, and in which we children used to bury each other, the extremity of the nose excepted, from the very enjoyment of the fragrant plenty. But that pantry of ours! Whenever and wherever we had a home, the shelves upon shelves of preserves, for instance, each great brown jar only labelled and overflowing with the smooth syrupy rapture of peach and quince, orange, lemon, and, last of all, watermelon rind cut into crosses, and stars, and hearts, transparent amber to the eye and entire satisfaction to the taste. Depend upon it, the glittering rows of canned fruit instead, to-day, are profoundly symbolic of our times, everything done away from home, done by wholesale and by machinery, even to the very education of children. Last Christmas your little Charlie drew out of his stocking—the word machinery reminds me of it—a toy steam-engine. He is all the wiser for it, but that gift was not to your child what to me was that Christmas jar of Ocoogee limes the winter of which I am now speaking, at our old homestead in Virginia. The exquisite flavor of those limes sweetened all my sojourn there, making more endurable even, our bondage to Uncle Archibald, and lingers as upon the palate of my memory to this hour.

I began this chapter by speaking of my father, but you must allow me to postpone further allusion to him for a while. Christmas has been mentioned! Christmas! and that Christmas at Uncle Archibald's breaks upon me again, as with the midnight splendors and songs once more of the angels to the shepherds. Allow me to explain. We never observed the birthday of Washington specially, though he was born South; why not I know not. Thanksgiving Day was as utterly unknown there as were many other New England notions since introduced. Fourth of July was vulgarized by the odor of fire-crackers, and by the crowding into town of the poor whites. New Year's was by no means a holiday, the very reverse; heads of household were as a rule deeply in debt, and there were unpleasant circumstances incident to the New Year, inseparable from a credit system, almost as universal and matter of course to that latitude, as is the system styled the solar. And so the one great holiday South was Christmas. "The negroes begin, I do believe," my uncle remarked one morning at breakfast as the season drew nigh, "the day after Christmas to say, 'Well, it's only twelve months to Christmas, any way!'"



THE COON HUNT. SEE PAGE 235.